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FEATURING: 1989 DATAMATION SUBJECT INDEX

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DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

SYSTEMS & STRATEGIES FOR THE '90S:

THE TOMORROW ORGANIZATION

Can IS Managers Reintegrate Their Companies?

Also in This Issue:

The Stages of CASE Usage

The Applications Wave Behind ISDN

Technology's Rewards Without the Risks

UNIX Ports in Europe

VOLUME 36
NUMBER 3

FEBRUARY 1
1990

DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

COVER STORY

CIOs like UNUM's John Alexander Jr. (center) and his team huddle to devise technology strategies that will enable the life insurance organization to thrive in the 1990s.

SYSTEMS STRATEGIES

The Tomorrow Organization 22

BY RALPH CARLYLE How do you decentralize and establish strong central controls simultaneously? The answer is to coordinate the two through a combination of IT, entrepreneurial teams, multidisciplinary workers— and, yes, the trusty old management hierarchy.

Cover Photography by David Bradley
Special thanks to "Say Brother," WGBH TV Boston and Set Designer Clinte Heitman for use of their studio.

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Our company is much more fleet of foot than it used to be, but not necessarily as a result of its new ownership structure. It's due to desktop systems and networks.

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Bull HN Information Systems
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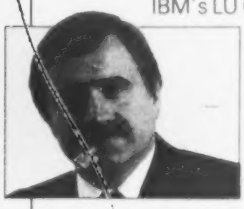
BY LEILA DAVIS Many people agree that IBM's LU 6.2 programming interface is better suited to cooperative processing than its older HLLAPI interface, but most say wholesale conversion is too expensive.



Users like ARCO's Greg Zwick like today's interfaces.

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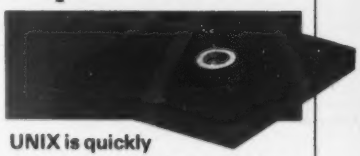

UNIX is quickly moving onto European docks.

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BY JOHN LAMB European IS suppliers are pairing and partnering in preparation for 1992, while their users wonder what advantages these research, development and distribution alliances will have for them.

Special supplement, not included in all issues. 88—1

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Building Tomorrow's Organizations

Corporations and institutions in the future may look more decentralized than ever, but they will act more centralized than most management gurus ever dreamed possible. Globalization demands such behavior. Information technology enables it.

As simple as this message sounds, it promises to be a difficult one for organizations to carry out. Worldwide competition requires a radical shift in companies' approach to managing people and resources away from hands-off autonomy to hands-everywhere coordination.

Industrial enterprises that thrived in the 1970s and 1980s by amassing dozens of independent business units, all run by disparate information systems, will suffer in the 1990s unless they regroup culturally and technologically to form integrated business units. Those that succeeded in the past on the labors of singularly focused, narrowly trained individuals will fail in the future unless they deploy technology to broaden the span of workers' control, especially managers. "A new breed of manager is required," in the words of one executive, "whom we can say can wear the sweat band, meaning a person who takes responsibility for a project's end result."

These truths became evident to senior writer Ralph Carlyle and his DATAMATION colleagues on the second leg of their journey chronicled in our year-long series, Systems and Strategies for the '90s. In this issue's cover story, "The Tomorrow Organization," Carlyle & company have discovered that most industries and organizations, and the individuals employed within them, are in the midst of a significant transformation of structure and systems. The change represents the underpinnings of "The Application Decade Begins," the title of our first stop (January 15, 1990) on the road toward defining critical issues and technologies for IS managers.

Photograph by David Bradley

ORGANIZATION MAN CARLYLE led a team effort.

Financial services providers, airline carriers and even computer companies themselves are reshaping the way they compete in the marketplace. All seek global views of their businesses and must, therefore, adopt common procedures, products and IS standards to achieve such vision. The Bechtel Group of Companies, Ford Motor Co., UNUM Life Insurance Co. and other users canvassed by the DATAMATION team share such a view, as do several of their technology suppliers such as Bull HN Information Systems Inc., Codex Corp. and Hewlett-Packard Co. All are embracing the new hierarchies of corporate organization resulting from this vision—lateral and horizontal lines of responsibility centrally coordinated via technology.

Helping organizations see every facet of their operations and managing each concurrently—concurrency may be the hot buzzword of the new decade—are the new responsibilities of IS executives and their staffs. "The idea that IT can truly be an enabler and an asset to the organization is of recent vintage," Carlyle writes. "Technology will allow professionals throughout an organization to . . . do what they want to do, but in a more amplified way."

The enabling technologies may, however, be more advanced than the enabling IS management required to shape the global vision demanded of the marketplace. PCs, workstations, networks, standard operating systems, distributed databases, computer-aided software engineering and other technology tools are readily available. What's less abundant is the management insight and foresight needed to effectively employ these IS elements. Using them to build the architectures needed by tomorrow's organizations takes innovation, courage, stamina, perseverance and a willingness to change.

If such characteristics aren't part of your organization's IS culture, it may not be around to enjoy the next millennium. If they are badges of the culture, tomorrow will certainly be yours.

Tim Mead, Editor-in-Chief

DATAMATION

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UNIX Ports In Europe

The countries that launched the open systems movement are increasingly counting on portable software in a range of applications.

BY PETER JUDGE

Illustration by David Barber

UNIX, the portable operating system that has cruised around the world, is dropping anchor in commercial ports around Europe—where the open systems movement was first launched. Over the last four years, European shipments of UNIX systems have steadily increased, particularly at the low end of the line, where 49% growth gains were chalked up in 1988. Many of those UNIX-based PC and workstation products are powering office automation (OA) applications in both private and public sector organizations.

Much of the momentum behind Europe's commercial UNIX wave is coming from the public sector, primarily because this is where commercial users take their cue. Early UNIX users, European governments and public utilities were quick to see that UNIX would allow them to buy cost-effective systems.

The most symbolic and significant user in the public sector is the European Commission (EC). The EC is standardizing on UNIX workstations for administrative chores and has laid down an open systems policy. By promoting open systems, including UNIX, the EC hopes to create a larger and more diverse market in Europe.

Following the Leaders

Following the EC's lead, the governments of France, Sweden and the United Kingdom have established their own explicit UNIX policies. Every two years, the Swedish government chooses four or five vendors to satisfy all of its UNIX contracts—contracts that were worth a hefty $145 million during the most recent round. The bulk of that business went to NCR Corp.

The Swedish government's UNIX mandate has influenced buying decisions in that country, says Hans Johanssen of the Swedish UNIX User Group. "When a company is thinking about a new system, it is very common for them to state that it should be UNIX."

The French tax office plans to install 800 UNIX systems by 1994, and the French ministries of agriculture and education have both launched mammoth UNIX projects. Meanwhile, France Telecom, which has 300 UNIX machines installed in its offices, expects to plug in another 700 units by 1993.

The West German government is still experimenting with UNIX, "Many [West German] government plans require UNIX, [although] there is some local flavor," points out Achim Brede, director of Bredex GmbH, a Braunschweig software house and vice chairman of the German UNIX User Group.

Although the Dutch government has yet to make an official endorsement of UNIX, Marton van Gelderen of the Dutch UNIX User Group thinks it's only a matter of time. "The [Dutch] government will eventually pick UNIX," he predicts.

Van Gelderen's reasons for the prediction are similar to those of others who have chosen the operating environment: flexibility and portability. "When an application runs under UNIX, it will survive hardware changes," van Gelderen says. "In the UNIX environment, there really is compatibility. It is fun for the suppliers and it's also fun for the users. You can change the underlying hardware without too much disruption of day-to-day services. You can choose the hardware that best suits your particular problem."

Various governmental advisory bodies in European nations are also climbing on board the UNIX bandwagon. In Britain, the Central Communications & Telecommunications Agency (CCTA) considered developing its own definition of a UNIX environment for government use. The idea was subsequently rejected in favor of a more general recommendation for products compliant with POSIX and the X/Open Portability Guide.

CCTA has installed some 20 Olivetti 3B2 PCs, which are spread between its

two sites in London and Norwich. These UNIX workstations, which are connected over two Ethernet local area networks linked together by an X.25 wide area net, handle office automation and electronic mail applications. Other functions are gradually being added. "That perhaps is the point of open systems," says a CCTA spokesperson. "They give you the flexibility to do more or less what you like, more or less when you like. You don't have to add a new system to add a new function."

As the public sector leads the way with UNIX, the private sector is certainly following. Public sector support has been crucial in priming the whole open systems market. It encouraged product development by reassuring vendors that the market for UNIX wares would indeed be large enough.

TOTAL COMPANIE'S NOEL: The oil company ported its UNIX application to a Convex computer.

In Ireland, Belfast Chemical Co. and two rival Dublin hardware companies, National Hardware and Associated Hardware, have become UNIX PC partisans. On the growing list of UNIX loyalists in Denmark are many local insurance companies, including the General Fire Insurance Co. and SAS International Hotels, which is currently in the development phase of its UNIX office systems.

Office automation applications are also on the UNIX menu in West Germany at Security Pacific EDP Service GmbH. The $230 million banking service relies on networked UNIX workstations from Siemens AG to cope with OA and leasing administration, as well as with other tasks that require direct host access.

Not only in West Germany, but elsewhere in Europe, UNIX has made the fastest progress on desktops that are destined to remain in the DOS domain. "There is very little available for OS/2," explains Norman Hull, technical director of Q2 Relational Software Ltd. in Carlo, Ireland. "Even links to DOS are better under UNIX," he insists.

There is also considerable interest in UNIX for business applications in France. Roughly 60% of the French users who replied to a recent survey by the Paris market research house Pierre Audoin Conseil (PAC) reported that their major UNIX applications were in the business arena.

UNIX's portability features saved the day for Total Companie Francaise des Petroles, a Paris-based oil company. The company has used UNIX in its Exploration Research & Development Division since 1983 for scientific applications, and it counts on IBM mainframes for its commercial and OA processing chores. Total's scientific applications for geology, geophysics and reservoir modeling are run on Convex Computer Corp. C210 and C220 supercomputers, which operate under UNIX. Graphics processing is done on a network of Sun Microsystems Inc. 3/60 workstations supported by five Sun 3/280 servers.

The Total division had originally relied on a Convex supercomputer and on an ETA supercomputer from Control Data Corp. CDC's decision, last April, to pull the plug on the machine could have posed real problems for Total. But the company found it could port its UNIX applications from the ETA supercomputer over to its Convex C210 and C220 machines. "We found it very easy to move the applications," confirms Dominique Noel, head of IS at Total Oil Marine, the company's Aberdeen, U.K., subsidiary.

Total also discovered the ease of integrating its Convex UNIX applications with its other UNIX systems—the Sun 3/60 workstations and 15 HP 9000 series 300 workstations from Hewlett-Packard Co., which are supported by three HP 9000 series 800 servers. These workstations are primarily used for database work in geophysics and prediction chores. All the division's systems are linked together on an Ethernet network.

Although Total is using UNIX for technical tasks, it's still tentative about using the operating environment for its classical business applications. At the end of last year, the company was deliberating a move to UNIX and is currently investigating this option.

Strategic Applications

Across the Channel in England, the Automobile Association (AA) has opted to use UNIX and other open systems products for developing strategic business applications. The $167 million association, which pulls in most of its revenue from its auto breakdown and recovery service, is Britain's largest private insurance broker.

The AA is currently using Pyramid 9810 UNIX systems from Pyramid Technology Corp. as communications and print servers. The 9810s enable MS-DOS workstations to communicate with series 39 level 80 mainframes from International Computers Ltd. (ICL) in three AA insurance offices. The association is planning to add some more local insurance brokerage applications and to provide some central database facilities.

In 1988, the Automobile Association spent $9 million of its $33 million in capital expenditure funds on IT equipment, and it's looking to trim these costs. "Over a period of years, it is our strategy to reduce the cost of the IS department," says John Strawbridge, AA's information systems manager.

Under the next part of this strategy, AA will gradually phase out its existing OA software by using a UNIX package. Eventually, UNIX will replace MS-DOS at the AA, which has made a definite decision not to adopt OS/2.

☐ UNIX COMPATIBILITY: IT'S FUN FOR THE SUPPLIERS, AND IT'S FUN FOR THE USERS.

AA's Strawbridge sees both the pluses and minuses of UNIX systems. "One of the advantages," he explains, "is that it opens up the market for commodity products." It also opened up the AA to problems, particularly in the area of multiprotocol communications. "I wouldn't say it's been a smooth road," says Strawbridge. "We've had to invent a lot of software."

Although most organizations using UNIX report success, some are looking for improvements. Security EDP, which

loves UNIX's portability features, isn't pleased with the discrepancies among the various software releases. The company also found the UNIX workstations more difficult to learn to use than ordinary PCs and plans to add more applications to enhance user friendliness.

Leeds, U.K.-based law firm Booth & Co. also points out some drawbacks.

☐ WHERE THE PUBLIC SECTOR GOES WITH UNIX, THE PRIVATE SECTOR FOLLOWS.

Booth's UNIX systems—from vendors Convergent Technologies Inc., MIPS Computer Systems Inc. and Motorola Inc.—are used mainly for OA applications. The company would like to use AT&T's RFS distributed file system extensions in UNIX V3. Unfortunately, its five Convergent S/320s currently only run V2. "We can't make the network look like one big machine," complains Dominic Hayes, a development analyst at Booth. "V3 has been out for a year, and we're still waiting."

Despite this complaint, Hayes is pleased with the performance and security of the UNIX environment. In terms of importance, Booth rates peripherals availability over portability. "If we want to change a screen, it's a fairly simple matter," he says.

The PAC survey showed that French users felt that UNIX's biggest shortcoming is its lack of facilities for integration with other systems. "There are great opportunities for software houses in everything that concerns integration of UNIX into the non-UNIX environment," says PAC's Cedric Thomas. Already taking advantage of this opportunity are European system and software houses such as the Sema Group PLC and Cap Gemini Sogeti in France.

Other Continental vendors are equally hungry for a slice of the European UNIX market—a market that was estimated at around $3.7 billion last year. That $3.7 billion actually represents roughly one-third of the total worldwide market.

The European market for UNIX wares is currently growing at a fast clip of 40% a year, according to Framingham, Mass.-based International Data Corp., which expects that growth to slow to between 10 and 15% by 1993. But UNIX, is certainly much more than a mere market to many. "UNIX is not a market," insists PAC's Thomas. "It's a tool." Today users in Europe have already begun to wield that tool to help shape their IS environments of tomorrow. ▭

Based in London, Peter Judge is a freelance technology journalist specializing in open systems.

Where UNIX is Running in Europe

UNIX scored its biggest hit on the desktop.

Systems	1988 Shipments	% Increase	Main Suppliers
PCs/Workstations	4,000	48	Sun, HP
Small Multiuser	55,000	29	NCR, Alto Siemens
Medium Multiuser	80,000	45	Nixdorf, Siemens

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